# MODIFICATION OF FRICTION ROLL DRIVE GEAR CASE TO PREVENT LOSS OF OIL AT OIL GUARD

## 1. GENERAL

1.001 This addendum supplements Section 159-720-813, Issue 2.

1.002 This addendum is issued to specify the use of KS-19578 L1 trichloroethane wherever KS-8372 trichloroethylene is now specified. The same precautions that apply for KS-8372 trichloroethylene shall apply to the KS-19578 L1 trichloroethane.

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# MODIFICATION OF FRICTION ROLL DRIVE GEAR CASE TO PREVENT LOSS OF OIL AT OIL GUARD

## 1. GENERAL

**1.01** This section covers the procedures for the modification of the friction roll drive gear case to prevent the loss of oil at the oil guard.

**1.02** This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

**1.03** These procedures are applicable to drives from which the oil is drained due to a capillary action of the eccentric coupling guard and oil guard. The drives so affected are those on which the boss around the hole in the gear case oil return through which the vertical shaft of the drive protrudes, is the same height as the outside diameter of the gear case as shown in Fig. 1. Gear cases with deep oil return as shown in Fig. 2 do not require this modification.

## 2. MATERIALS

| CODE NO. | DESCRIPTION |
|---|---|
| — | Cloth, per KS-2423 |
| — | Trichloroethylene per KS-19578 |
| — | Sealing Compound, per KS-6824 |

## 3. PROCEDURES FOR MOUNTING AND SEALING ADAPTER (P-290184 SEALING RING)

### Preparation of Drive

**3.01** It will be necessary to stop the drive before conditioning the gear case in accordance with the following procedures. Also ascertain whether it is necessary to make any of the associated circuits busy. Make circuits so affected busy in the approved manner.

**3.02** Remove the eccentric coupling guard, eccentric coupling and oil guard as outlined in the section covering this apparatus. With a KS-2423 cloth moistened with trichloroethylene, wipe off any oil that may be adhering to the machined upper surface of the gear case oil return on which the oil guard rests.

### Sealing of Adapter

**3.03** After the surface has been thoroughly cleaned, apply the KS-6824 sealing compound to one of the flat surfaces of the adapter and to the machined surface of the gear case oil return. Slide the adapter between the vertical shaft of the drive and the vertical drive shaft taking care not to allow the adapter to make contact with either shaft. Place the adapter on the oil return so that the inner circumference of the extension coincides with the circumference of the machined surface. Apply only sufficient pressure on the adapter to squeeze out the excess sealing compound. The position of the adapter may be checked by running the finger around its inside circumference and the oil return. Wipe off the excess sealing compound with a KS-2423 cloth moistened with trichloroethylene. Care should be exercised to prevent sealing compound from entering oil return.

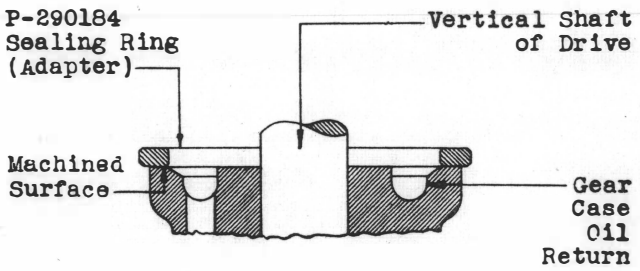


**Fig. 1 – Gear Case With Shallow Oil Return**

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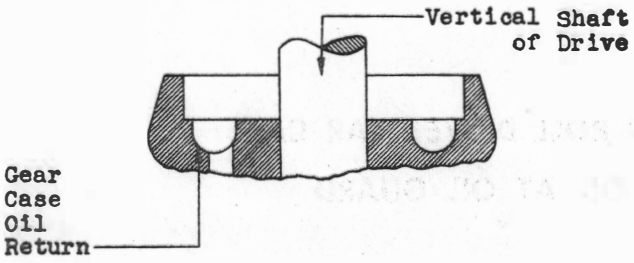


**Fig. 2 – Gear Case With Deep Oil Return**

**Assembly and Adjusting of Apparatus**

**3.04** Remount the oil guard and reassemble the eccentric coupling. Adjust the eccentric coupling to meet the requirements specified in the section covering this apparatus. Then reassemble the eccentric guard as outlined in the section specified above.

# PROCEDURE FOR RELIEVING OVERHEATING OF BEARINGS

## FRICTION ROLL DRIVE WORM CASE HOUSING BEARINGS

### 1. GENERAL

1.01 This section covers procedures for relieving overheating of bearings of friction roll drive worm case housings where overheating is due to binding and is not to be used as a precautionary measure.

1.02 This section is reissued to revise and amplify the procedures. Detailed reasons for reissue will be found at the end of the section.

1.03 Before proceeding as outlined herein, check the level of the oil in the gear case and if low bring it up to the proper level. If the bearing still runs hot proceed as outlined herein.

### 2. LIST OF TOOLS AND MATERIALS

| Code or Spec. No. | Description |
|---|---|
| **Tools** | |
| D-97083 | .624" Reamer |
| D-97084 | Tapered Bushing |
| D-97085 | 3/8" Reamer and Handle |
| D-97086 | Guide and Clamp Nut |
| R-1060 | Putty Knife |
| - | 4" Regular Screwdriver |
| **Materials** | |
| KS-2245 | Oil |
| KS-2423 | Cloth |
| KS-8372 | Cleaning Fluid |
| - | Receptacles for Drained Oil |

### 3. PROCEDURES FOR REAMING BEARINGS

3.01 Preparation of Drive: Ascertain whether it is necessary to make any of the associated circuits busy. Make circuits so affected busy in the approved manner. Stop the drive.

3.02 Remove the worm from the drive and the housing assembly from the worm as outlined in Section 159-720-801 covering this apparatus. Remove the spring from the housing and place the housing in the D-97086 guide and clamp nut.

3.03 Preparation of Worm Case Housing Before Reaming Bearing: Remove the old sealing compound from the large opening of the worm case housing so that the tapered guide will fit correctly. This may be done more readily by wiping the coated parts with a KS-2423 cloth saturated with KS-8372 cleaning fluid immediately after the seal is broken. However, in some cases it may be necessary to scrape the surface with an R-1060 putty knife to remove the sealing compound.

3.04 Preparation of D-97083 Reamer: Remove the film of KS-2245 oil from the D-97083 reamer with a KS-2423 cloth.

3.05 Preparation of D-97085 Reamer and D-97086 Guide: Remove the D-97085 reamer from the D-97086 guide. Separate the guide from the clamp nut by turning them in opposite directions. Remove the film of KS-2245 oil from the reamer with a KS-2423 cloth.

3.06 Reaming Bearing at Motor End of Housing: Insert the D-97083 reamer into the worm case housing through the large opening and slide it through the bearing until the small end of the arbor of the reamer protrudes through the small opening at the motor coupling end approximately 1/2". Telescope the D-97084 tapered bushing over the arbor and press it into the small opening as shown in Fig. 1. Then press the tapered guide on the reamer into the large opening in the worm case housing finger tight. Ream the bearing to about 1/3 its depth by turning the handle of the reamer slowly in a clockwise direction. Then with the tapered guide still in place carefully remove the reamer from the bearing still turning it in a clockwise direction. Remove any chips that may adhere to the reamer with a KS-2423 cloth. Reinsert the reamer into the large opening in the housing and continue the reaming operation as outlined above until about 2/3 the depth of the bearing has been reamed. Remove and clean the reamer as outlined above after which it should be reinserted in the housing as outlined above only this time continue the reaming operation until the shoulder of the reamer handle bears against the tapered guide. Remove and clean the reamer as outlined above. Remove the D-97084 tapered bushing.

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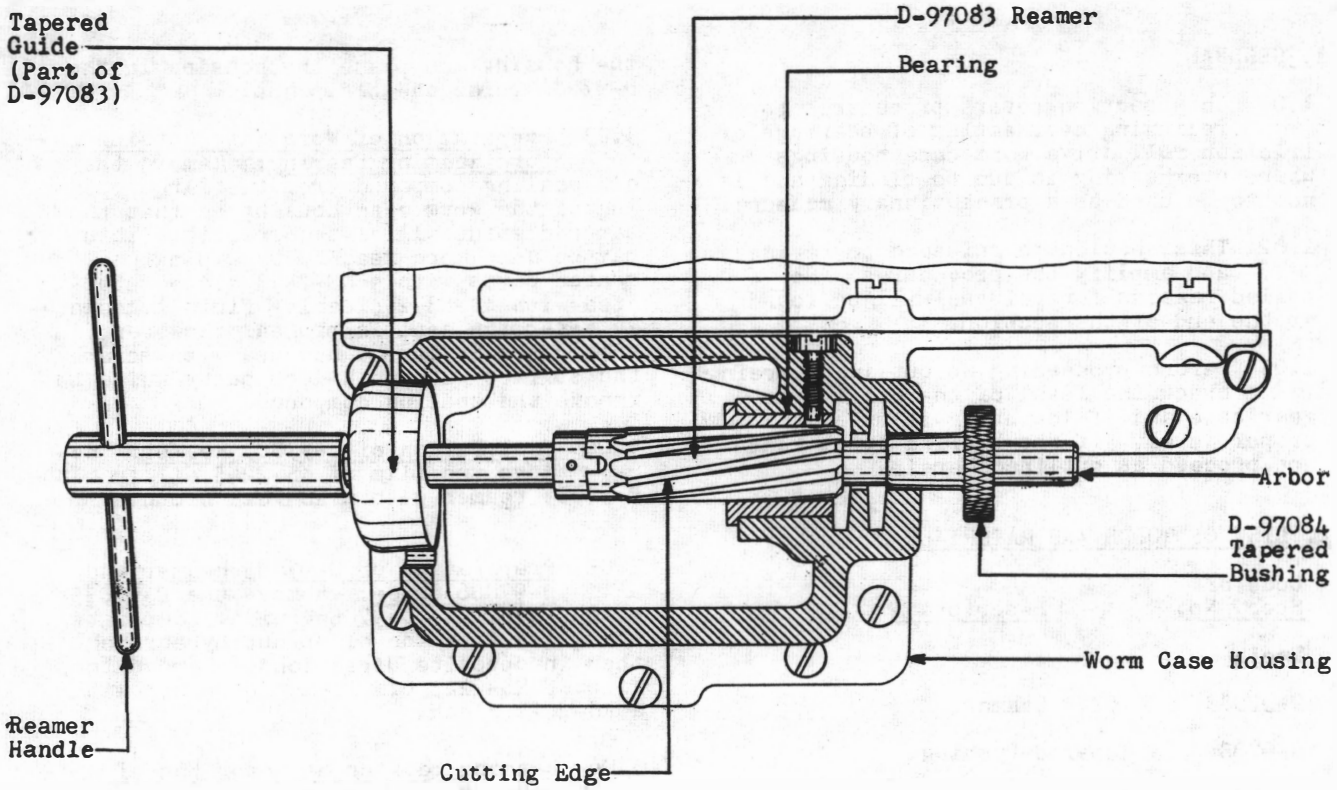


Fig. 1 - Reaming Bearing at Motor End of Worm Case Housing

3.07 Reaming Bearing in Housing Assembly: Place the housing assembly in the guide of the D-97086 guide and clamp nut assembly so that the deeper collar of the housing assembly is in the well in the guide. See Fig. 2. Mount and securely clamp the clamp nut on the guide. Hold the guide in one hand and insert the D-97085 reamer into the shank of the guide as shown in Fig. 3. Ream the bearing to about 1/3 its depth by turning the handle of the reamer slowly in a clockwise direction. Carefully remove the reamer from the housing assembly still turning it in a clockwise direction. Remove any chips that may adhere to the reamer with a KS-2423 cloth. Reinsert the reamer into the housing assembly and continue the reaming operation as outlined above until about 2/3 of the depth of the bearing has been reamed. Remove and clean the reamer as outlined above after which it should be reinserted in the housing assembly as outlined above only this time continue the reaming operation until the shoulder of the reamer handle bears against the bearing. Remove and clean the reamer as outlined above. Separate the clamp nut and guide and remove the housing assembly. Remove any chips that may have dropped off the reamer by wiping the bearing and housing with a KS-2423 cloth moistened with KS-2245 oil. If the worm is dirty, clean it at this time with a clean KS-2423 cloth.

3.08 Cleaning D-97083 and D-97085 Reamers: Clean the D-97083 and D-97085 reamers with a KS-2423 cloth and then reassemble the guide and clamp nut. Then apply a

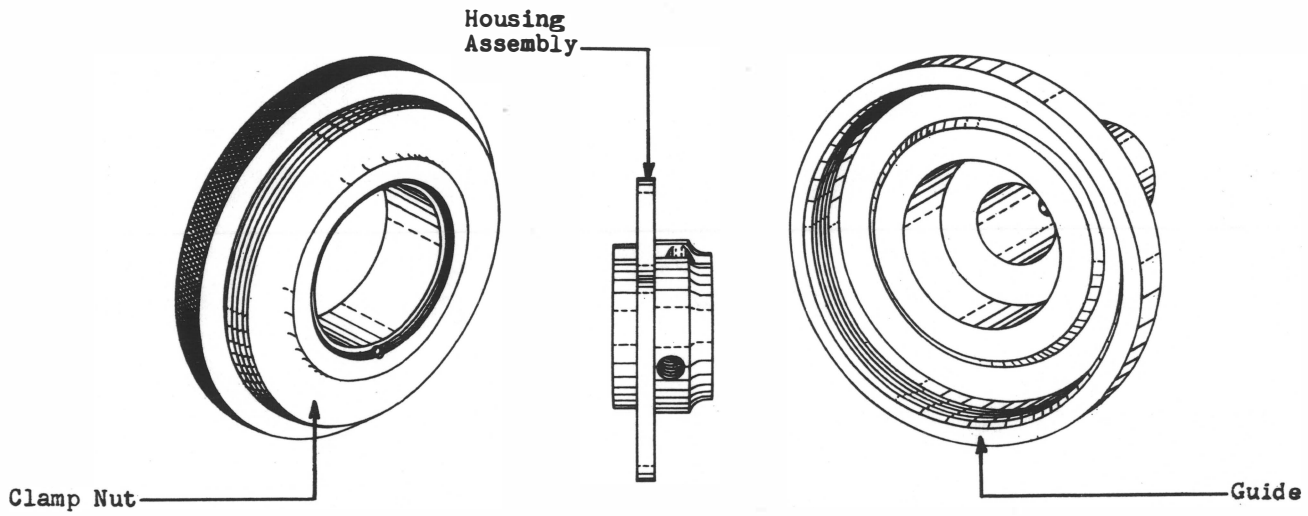


Fig. 2 - D-97086 Guide and Clamp Nut for Mounting Housing Assembly for Reaming Bearing

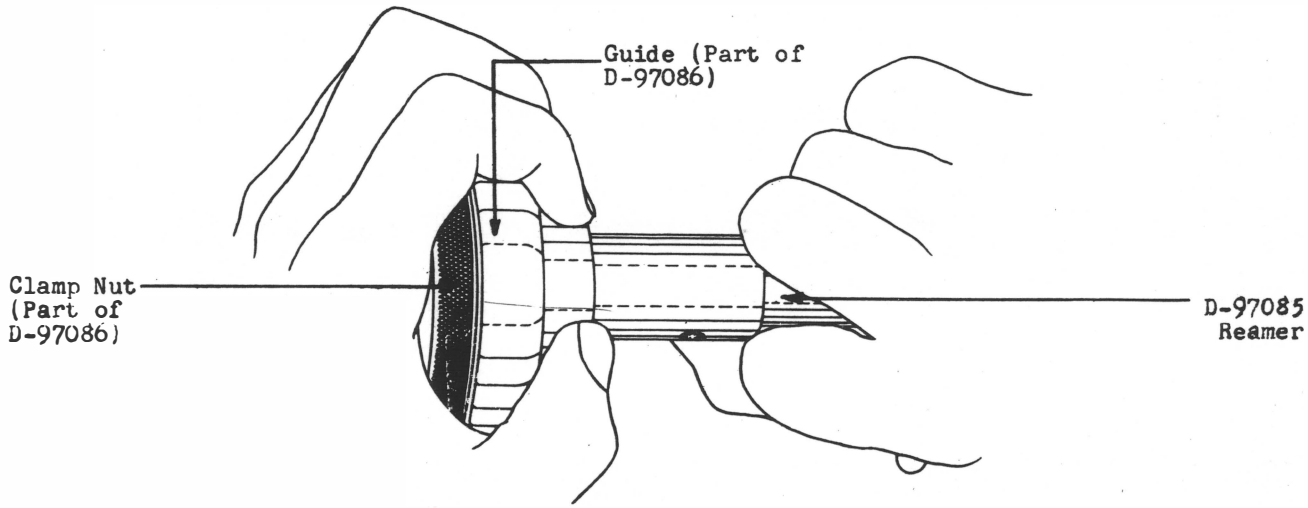


Fig. 3 - Reaming Bearing in Housing Assembly

light film of KS-2245 oil to both reamers before storing them for future use to prevent the possibility of rusting.

3.09 Reassembling Apparatus: Reassemble all parts in reverse order as outlined in Sections 159-720-701 and 159-720-801 covering this apparatus. Insert drain plug and refill the gear case to the level specified.

REASONS FOR REISSUE

1. To revise the paragraph covering the contents of the section to limit the application of the section.(1.01)
2. To add the procedure covering the preparation of the worm case housing. (3.03)
3. To revise the procedure covering reaming bearing at motor end to cover additional precautions. (3.06)
4. To revise the list of tools and materials. (2)
5. To amplify the procedures covering removal and reassembling of the parts to cover the removal and insertion of the spring. (3.02 and 3.09)